FEASIBILITY STUDY

Catawba County, SR 2007, From Proposed
US 321 to Existing US 321,
R-2623

Prepared by
Planning and Research Branch
Division of Highways
N. C. Department of Transportation

Marc J. Hamel
Marc Hamel
Project Planning Engineer

R. G. Dawson, Jr., P. E.
Head of Feasibility & Special
Studies Unit

6/19/90
Date

for L. J. Ward, P. E.
Manager, Planning and Research

Catawba County, SR 2007, From Proposed
US 321 to Existing US 321,
R-2623

I. DESCRIPTION

This report covers a preliminary study of the proposed upgrading of the subject road from existing US 321 in Maiden to SR 1005 near the proposed US 321 (see Figure 1). The project is approximately 2.5 miles in length, and appears in the 1990- 1996 Transportation Improvement Program (T.I.P.) for feasibility study and/or right-of-way protection. It is not currently funded.

II. PURPOSE OF PROJECT

Existing Route Characteristics

SR 2007 appears as a major thoroughfare on the Maiden Thoroughfare Plan (adopted 1988, see Figure 3), and as a rural minor collector on the County Functional Classification Plan. The route will serve as Maiden's main link to proposed US 321 via SR 1005 which will interchange with US 321.

The existing secondary route has variable 2-lane pavement width on the studied section. Within the town limits of Maiden, SR 2007 has a variable curb and guttered width of 30 to 36 feet (the latter with parking). Outside the town limits, it has a pavement width of 18 to 20 feet with 3 to 5-foot unpaved shoulders.

The horizontal alignment of the existing road outside the town limits is poor, making it difficult for truck traffic to negotiate the route. This alignment contains several adverse curves ranging up to 20 degrees (35 MPH safe speed). It is constructed through rolling terrain. Speed limit on the route is 35 mph, changing to 55 mph west of SR 1005.

There are 2 bridges on SR 2007, with information listed below:

Bridge No.	Location	Length (Ft.)	Width (Ft.)	Age (Yrs.)	Rating (New=100)
115	Maiden Ck.	86	16.8	65	2.0
116	Clark Ck.	151	19.3	26	28.6

There is one traffic signal located at US 321, and development is primarily residential with small commercial at US 321.

Traffic Volumes, Capacity, and Accident Record

Current traffic volumes range from 1900 vehicles per day (vpd) to the west to 2200 vpd in town. These volumes are anticipated to reach 8200 and 8400 vpd respectively by the year 2010. Maiden's industry relies heavily on trucking, therefore a high volume of trucks will be present on SR 2007 when proposed US 321 is complete.

Present capacity on the existing 2-lane secondary road is approximately 4200 vpd. Thus, traffic demand in the future will exceed capacity.

Accident data for a recent three year period indicates a total of 55 accidents on this section of SR 2007. This yields a total accident rate of 722.73 accidents per hundred million vehicle miles (ACC/100MVM), which is much greater than the statewide average of 354.4 for similar, 2-lane, rural SR routes. Predominant accident types were running off of the road (62%), and angle collisions (9%).

Need for Project

The existing SR 2007 is anticipated to be over capacity when the proposed US 321 is completed, and SR 2007 becomes a major route into Maiden. Also, the existing roadway has poor alignment, making it unsafe for the large volume of trucks expected.

III. RECOMMENDATIONS AND COSTS

Upgrades to SR 2007 include widening to an adequate 2-lane pavement, with realignments to correct deficiencies in the current alignment.

The recommended cross section is a 24-foot pavement marked for 2 lanes, with 8-foot shoulders of which 2 feet are paved. Due to adequate existing pavement widths in Maiden, it is recommended that upgrades begin at N."D"Ave., which is also the entrance to the high school (see Figure 2). Approximately 500 feet west of this project beginning, the recommended alignment goes onto new location as indicated on the thoroughfare plan (Figure 3) and Figure 2. This corrects alignment deficiencies in the existing route. The existing alignment is rejoined approximately 0.5 mile west of SR 2010, and the existing road is proposed to be widened to the project end at SR 1005. SR 1005 is planned to be improved in conjunction with the construction of an interchange at proposed US 321. SR 2007 west of SR 1005 is planned to be closed at proposed US 321 and relocated to connect with SR 1005 south of the proposed interchange (see Figure 2).

To accommodate possible future upgrading of this route to a multilane facility, 100 and 200-foot right-of-way widths on existing and new location, respectively, were used for cost estimating purposes. A 200-foot right-of-way was deemed necessary on new location due to heavy rolling terrain. Existing right-of-way on SR 2007 is variable 28 to 40 feet.

It is anticipated that bridges over Maiden and Clark Creeks will be required on the realignment. The existing bridges (numbers 115 and 116) are scheduled for replacement studies in 1992 under the project number B-2013. Planning for the bridge replacement should be coordinated with the improvement of SR 2007.

The total estimated cost of the recommended improvements is $3,450,000, with $ 2,950,000 for roadway construction, and $500,000 for right-of-way. Cost estimates were prepared by the Preliminary Estimate Engineer and the Right-of-Way Branch.

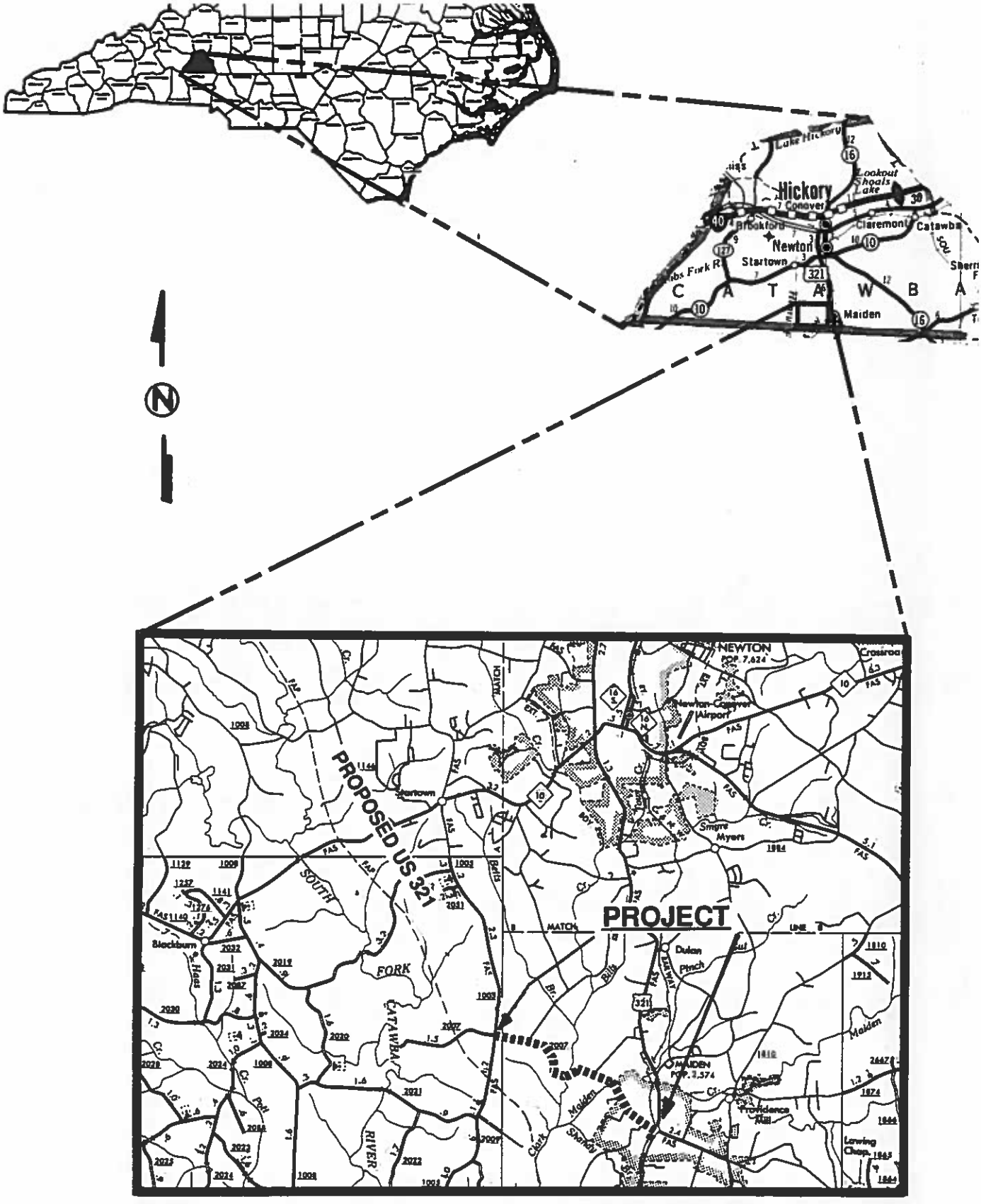
No other alignments were deemed superior to the recommended thoroughfare plan alignment.

IV. OTHER COMMENTS

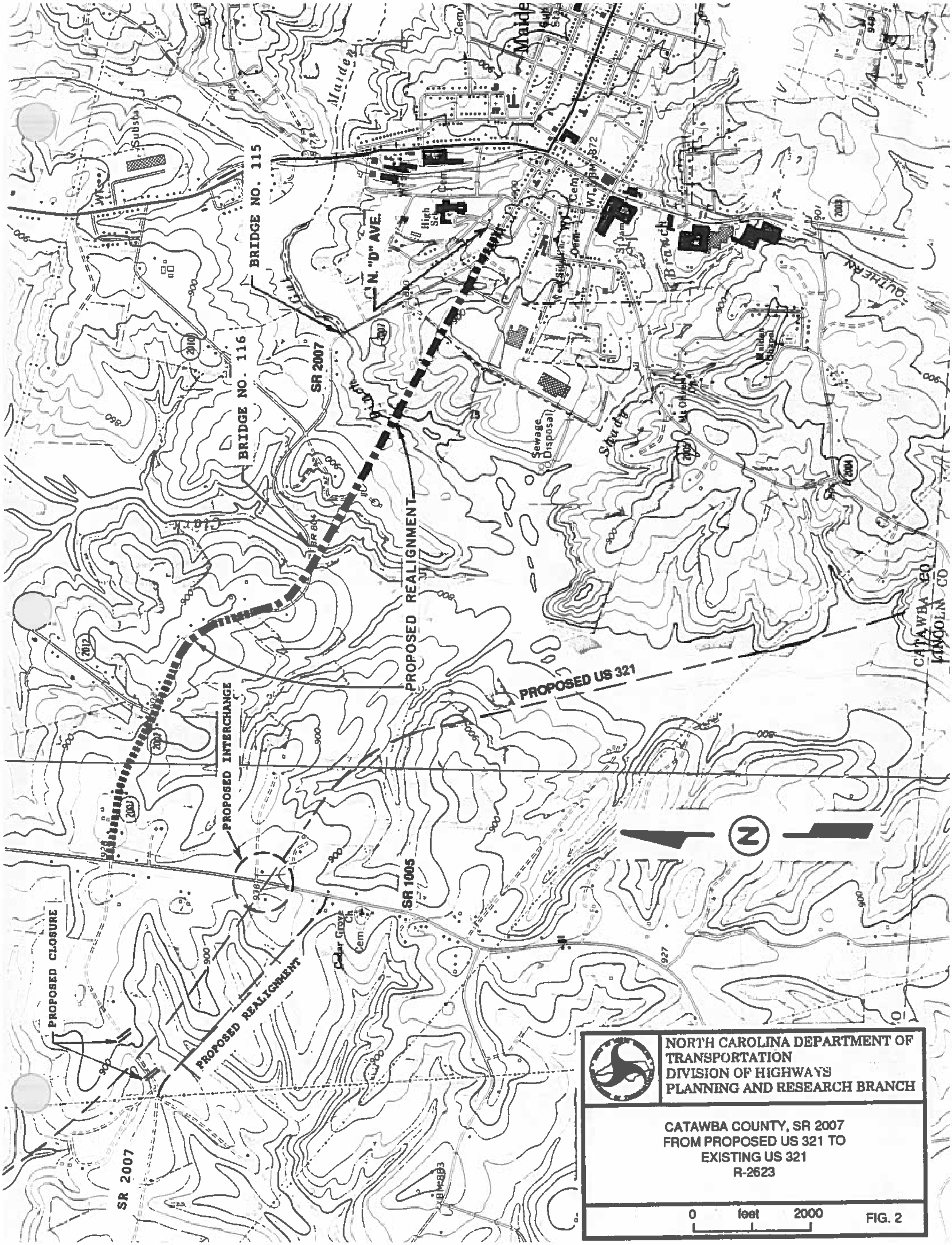
Negative environmental impacts of this project include: (1) relocation of 2 residences; (2) loss of pasture and woodlands; (3) increased noise for remaining residences on SR 2007; and (4) loss of a small amount of wetlands at stream crossings.

If this project is to be implemented at a future date, all feasible alternatives and their associated impacts will have to be evaluated in a planning and environmental document prior to that time, and a final decision made as to the most appropriate improvement.

MH/plr



	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PLANNING AND RESEARCH BRANCH
CATAWBA COUNTY, SR 2007 FROM PROPOSED US 321 TO EXISTING US 321 R-2623	
0 miles 2	FIG. 1

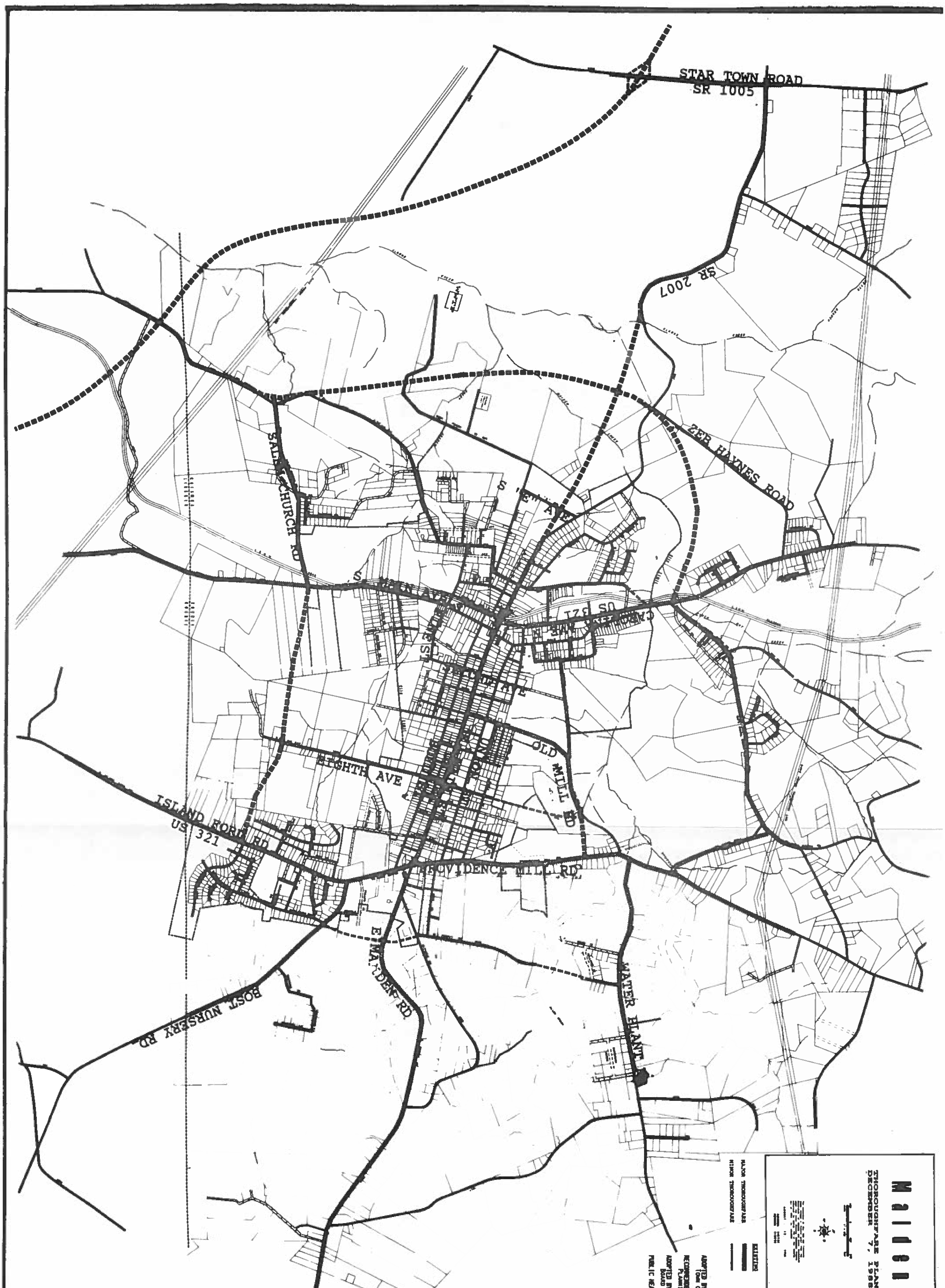


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANNING AND RESEARCH BRANCH

CATAWBA COUNTY, SR 2007
FROM PROPOSED US 321 TO
EXISTING US 321
R-2623

0 feet 2000

FIG. 2


STAR TOWN ROAD
SR 1005
SR 2007
ZEB HAYNES ROAD
SALEM CHURCH RD
S "E" AVE
S MAIN AVE
CAROLINA AVE
US 321
EIGHTH AVE
OLD MILL RD
ISLAND FORD RD
US 321
PROVIDENCE MILL RD
E MAIDEN RD
BOST NURSERY RD
WATER PLANT
Maiden
THOROUGHFARE PLAN
DECEMBER 7, 1988
EXISTING
PROPOSED
MAJOR THOROUGHFARE
MINOR THOROUGHFARE
ADOPTED BY: TOWN OF MAIDEN DECEMBER
RECOMMENDED FOR APPROVAL BY: PLANNING & RESEARCH BRANCH
ADOPTED BY: BOARD OF TRANSPORTATION
PUBLIC HEARING: NOVEMBER

FIGUR